

CLAIMS

What is claimed is:

- 1 1. A computer server rack, comprising:
2 a plurality of modular server chassis configured to hold a plurality of computer servers,
3 each chassis comprising a chassis controller having a processor and a memory, and
4 an internal communications bus coupling each of the chassis controllers;
5 wherein the chassis controllers transmit and receive a server rack name on the internal
6 communications bus; and
7 wherein the name of the rack is stored in the memory in each chassis controller.
- 1 2. The server rack of claim 1 further comprising at least one modular power supply chassis
2 configured to hold a plurality of power supplies and further comprising a chassis controller having
3 a processor and a memory.
- 1 3. The server rack of claim 1 further comprising an external port in at least one of the
2 computer servers;
3 wherein the rack name is assigned to the rack via manual input through the external port.
- 1 4. The server rack of claim 3 wherein each chassis controller further comprises a conflict flag;
2 wherein if a controller receives a rack name from the internal communications bus that
3 differs from the rack name stored in memory, the controller issues a naming conflict message and
4 changes the position of the conflict flag.

1 5. The server rack of claim 4 wherein the conflict flag is a bit field in the chassis controller.

1 6. The server rack of claim 4 wherein the naming conflict message is warning to a server
2 administrator.

1 7. The server rack of claim 1 wherein;
2 the memory in which the rack name is stored is flash memory.

1 8. A chassis controller deployable in a server rack comprising:
2 a processor;
3 a system memory;
4 a flash memory;
5 an internal bus port through which the controller may communicate with other controllers;
6 a device bus port through which the controller may communicate with other devices in the
7 same chassis;
8 wherein the name of the rack in which the chassis is disposed is stored in flash memory.

1 9. The chassis controller of claim 8 wherein:
2 if the controller receives a rack name from the device bus, the new name is written to flash
3 memory.

1 10. The chassis controller of claim 9 wherein:

2 if the controller receives a rack name from the internal bus, the new name is compared with
3 the rack name in flash memory to check for name conflicts.

1 11. The chassis controller of claim 10 further comprising:

2 if the controller receives a conflict message from the internal bus, the existing name in flash
3 memory is invalidated.

1 12. A method of propagating a rack name within a server rack, comprising:

2 receiving a request to set the rack name at one of a plurality of chassis controllers; and
3 determining if the rack name was received from a transmitting chassis controllers along an
4 internal bus or from an external port;

5 wherein if the rack name was received from an external port, setting the rack name within
6 the chassis controller.

1 13. The method of claim 12, wherein:

2 if the rack name is received from the internal bus, determining whether the transmitting
3 chassis controller is authorized to issue the request to the receiving chassis controller; and

4 if the transmitting chassis controller is authorized to issue the request, setting the rack name
5 within the receiving chassis controller

1 14. The method of claim 13, wherein:

2 if the transmitting chassis controller is not authorized to issue the request, issuing a security
3 alert.

1 15. The method of claim 13, further comprising:
2 forwarding the new rack name along the internal bus to another of the plurality of chassis
3 controllers.

1 16. The method of claim 13, further comprising:
2 clearing any naming conflict flags after setting the new rack name.

1 17. A method of propagating a rack name within a server rack, comprising:
2 issuing a request for a rack name from a first to a second of a plurality of chassis
3 controllers; and
4 receiving a response from the second chassis controller at the first chassis controller; and
5 determining whether the first chassis controller has an existing rack name;
6 wherein if no existing rack name exists and the response includes a new rack name, setting
7 the rack name within the first chassis controller.

1 18. The method of claim 17, wherein:
2 if an existing rack name matches the rack name received from the second chassis
3 controller, keeping the rack name within the first chassis controller.

1 19. The method of claim 17, wherein:
2 if an existing rack name does not match the rack name received from the second chassis
3 controller, raising a name conflict flag and reporting the naming conflict to a system administrator.

1 20. The method of claim 17, wherein:
2 if the first chassis controller has an existing rack name and if the response from the second
3 chassis controller does not include a rack name nor a naming conflict flag, propagating the internal
4 rack name to other chassis controllers.

1 21. The method of claim 17, wherein:
2 if the response from the second chassis controller includes a naming conflict flag, raising a
3 naming conflict flag.

1 22. A method of propagating a rack name within an electronics rack, comprising:
2 receiving a request to set the rack name at one of a plurality of peer controllers; and
3 determining if the rack name was received from a transmitting peer controllers along an
4 internal bus or from an external port;
5 wherein if the rack name was received from an external port, setting the rack name within
6 the peer controller.

1 23. The method of claim 22, wherein:
2 if the rack name is received from the internal bus, determining whether the transmitting
3 peer controller is authorized to issue the request to the receiving peer controller; and
4 if the transmitting peer controller is authorized to issue the request, setting the rack name
5 within the receiving peer controller

1 24. The method of claim 23, wherein:
2 if the transmitting peer controller is not authorized to issue the request, issuing a security
3 alert.

1 25. The method of claim 23, further comprising:
2 forwarding the new rack name along the internal bus to another of the plurality of peer
3 controllers.

1 26. The method of claim 23, further comprising:
2 clearing any naming conflict flags after setting the new rack name.

1 27. A method of propagating a rack name within an electronics rack, comprising:
2 issuing a request for a rack name from a first to a second of a plurality of peer controllers;
3 and
4 receiving a response from the second peer controller at the first peer controller; and
5 determining whether the first peer controller has an existing rack name;
6 wherein if no existing rack name exists and the response includes a new rack name, setting
7 the rack name within the first peer controller.

1 28. The method of claim 27, wherein:
2 if an existing rack name matches the rack name received from the second peer controller,
3 keeping the rack name within the first peer controller.

1 29. The method of claim 27, wherein:
2 if an existing rack name does not match the rack name received from the second peer
3 controller, raising a name conflict flag and reporting the naming conflict to a system administrator.

1 30. The method of claim 27, wherein:
2 if the first peer controller has an existing rack name and if the response from the second
3 peer controller does not include a rack name nor a naming conflict flag, propagating the internal
4 rack name to other peer controllers.

1 31. The method of claim 27, wherein:
2 if the response from the second peer controller includes a naming conflict flag, raising a
3 naming conflict flag.

1 32. An electronics rack, comprising:
2 a plurality of modular devices, each device including a peer controller comprising a
3 processor and a memory; and
4 an internal communications bus coupling each of the peer controllers;
5 wherein the peer controllers transmit and receive a server rack name on the internal
6 communications bus.

1 33. The electronics rack of claim 32 wherein:
2 the name of the rack is stored in the memory in each peer controller.

1 34. The electronics rack of claim 33 further comprising an external port in at least one of the
2 peer controllers;

3 wherein the rack name is assigned to the rack via manual input through the external port.

1 35. The electronics rack of claim 34 wherein each peer controller further comprises a conflict
2 flag;

3 wherein if a peer controller receives a rack name from the internal communications bus that
4 differs from the rack name stored in local memory, the peer controller issues a naming conflict
5 message and changes the position of the conflict flag.